

CLAIMS

1. A process for manufacturing gas diffusion electrodes, which process comprises:
 - 5 a) treating an area of a pre-shrunk porous hydrophobic substrate so as to restrict the slurry deposited in step b) to the said area
 - b) dispensing a slurry of catalyst onto the area,
 - c) removing liquid from the dispensed slurry, and
 - d) treating the dried slurry to remove organic materials.
- 10 2. A process as in claim 1 wherein step a) comprises forming a well at the said area in the hydrophobic substrate.
- 15 3. A process as in claim 1 where step a) comprises surface treating the hydrophobic substrate to render the substrate less hydrophobic in the said area.
- 20 4. A process as in claim 1 wherein step a) comprises (i) forming a well in the pre-shrunk porous hydrophobic substrate and (ii) surface treating the hydrophobic substrate to render the substrate that is in the well or is destined to be within the well less hydrophobic.
- 25 5. A process as in claim 4 wherein the surface treatment step reduces the hydrophobicity of the substrate only in the area of the substrate within the well or that is destined to form the well.
- 30 6. A process as claimed in claim 4 or claim 5, wherein step i) is performed after step ii) or *vice versa*.
7. A process as claimed in any of claims 1 to 6, wherein step c) comprises heating the slurry to evaporate the liquid.

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8. A process as claimed in any one of claims 1 to 6 wherein step d) comprises heating the dried slurry to a temperature sufficient to decompose the organic materials.
- 5 9. A process as in any of claims 1 to 6, where step c) is achieved by solidifying the liquid.
- 10 10. A process as claimed in claim 1 to 9, which includes pre-shrinking the hydrophobic substrate by heat treatment at a temperature greater than that used in either of steps c) or d).
11. A process as claimed in any one of claims 1 to 10, which includes a further step of :
- 15 e) cutting the catalyst deposit and the underlying portion of substrate from the rest of the hydrophobic substrate to provide a porous and conductive catalyst mass supported on the said portion of the substrate.
- 20 12. A process as claimed in any one of claims 1 to 11, wherein the hydrophobic substrate is PTFE.
13. A process as claimed in any one of claims 1 to 12 wherein steps (c) and (d) are performed in a single step.
- 25 14. A gas diffusion electrode made by the process of any one of claims 1 to 13.